

Human IRAK-4 protein sequence

10	20	30	40	50	
MNK PIT PST YVR CLN VGL IRK LSD FID PQE GWK KLA VAI KKP SGD DRY NQF HIR					
60	70	80	90	100	
RFE ALL QTG KSP TSE LLF DWG TTN CTA GDL VDL LIQ NEF FAP ASL LLP DAV PKT					
110	120	130	140	150	160
ANT LPS KEA ITV QQK QMP FCD KDR TLM TPV QNL EQS YMP PDS SSP ENK SLE VSD					
170	180	190	200	210	
TRF HSF SFY ELK NVT NNF DER PIS VGG NKM GEG GFG VVY KGY VNN TTV AVK KLA					
220	230	240	250	260	270
AMV DIT TEE LKQ QFD QEI KVM AKC QHE NLV ELL GFS SDG DDL CLV YVY MPN GSL					
280	290	300	310	320	
LDR LSC LDG TPP LSW HMR CKI AQG AAN GIN FLH ENH HIH RDI KSA NIL LDE AFT					
330	340	350	360	370	
AKI SDF GLA RAS EKF AQT VMT SRI VGT TAY MAP EAL RGE ITP KSD IYS FGV VLL					
380	390	400	410	420	430
EII TGL PAV DEH REP QLL LDI KEE IED EEK TIE DYI DKK MND ADS TSV EAM YSV					
440	450	460			
ASQ CLH EKK NKR PDI KKV QQL LQE MTA S*					

FIGURE 1

Human IRAK-4 cDNA sequence

10	20	30	40	50													
ATG	AAC	AAA	CCC	ATA	ACA	CCA	TCA	ACA	TAT	GTG	CGC	TGC	CTC	AAT	GTT	GGA	CTA
M	N	K	P	I	T	P	S	T	Y	V	R	C	L	N	V	G	L>
60	70	80	90	100													
ATT	AGG	AAG	CTG	TCA	GAT	TTT	ATT	GAT	CCT	CAA	GAA	GGA	TGG	AAG	AAG	TTA	GCT
I	R	K	L	S	D	F	I	D	P	Q	E	G	W	K	K	L	A>
110	120	130	140	150									160				
GTA	GCT	ATT	AAA	AAA	CCA	TCT	GGT	GAT	GAT	AGA	TAC	AAT	CAG	TTT	CAC	ATA	AGG
V	A	I	K	K	P	S	G	D	D	R	Y	N	Q	F	H	I	R>
170	180	190	200	210													
AGA	TTT	GAA	GCA	TTA	CTT	CAA	ACT	GGA	AAA	AGT	CCC	ACT	TCT	GAA	TTA	CTG	TTT
R	F	E	A	L	L	Q	T	G	K	S	P	T	S	E	L	L	F>
220	230	240	250	260									270				
GAC	TGG	GGC	ACC	ACA	AAT	TGC	ACA	GCT	GGT	GAT	CTT	GTG	GAT	CTT	TTG	ATC	CAA
D	W	G	T	T	N	C	T	A	G	D	L	V	D	L	L	I	Q>
280	290	300	310	320													
AAT	GAA	TTT	TTT	GCT	CCT	GCG	AGT	CTT	TTG	CTC	CCA	GAT	GCT	GTT	CCC	AAA	ACT
N	E	F	F	A	P	A	S	L	L	L	P	D	A	V	P	K	T>
330	340	350	360	370													
GCT	AAT	ACA	CTA	CCT	TCT	AAA	GAA	GCT	ATA	ACA	GTT	CAG	CAA	AAA	CAG	ATG	CCT
A	N	T	L	P	S	K	E	A	I	T	V	Q	Q	K	Q	M	P>
380	390	400	410	420									430				
TTC	TGT	GAC	AAA	GAC	AGG	ACA	TTG	ATG	ACA	CCT	GTG	CAG	AAT	CTT	GAA	CAA	AGC
F	C	D	K	D	R	T	L	M	T	P	V	Q	N	L	E	Q	S>
440	450	460	470	480													
TAT	ATG	CCA	CCT	GAC	TCC	TCA	AGT	CCA	GAA	AAT	AAA	AGT	TTA	GAA	GTT	AGT	GAT
Y	M	P	P	D	S	S	S	P	E	N	K	S	L	E	V	S	D>
490	500	510	520	530									540				
ACA	CGT	TTT	CAC	AGT	TTT	TCA	TTT	TAT	GAA	TTG	AAG	AAT	GTC	ACA	AAT	AAC	TTT
T	R	F	H	S	F	S	F	Y	E	L	K	N	V	T	N	N	F>
550	560	570	580	590													
GAT	GAA	CGA	CCC	ATT	TCT	GTT	GGT	AAT	AAA	ATG	GGA	GAG	GGA	GGA	TTT	GGA	
D	E	R	P	I	S	V	G	G	N	K	M	G	E	G	G	F	G>
600	610	620	630	640													

FIGURE 2A

GTT GTA TAT AAA GGC TAC GTA AAT AAC ACA ACT GTG GCA GTG AAG AAG CTT GCA
 V V Y K G Y V N N T T V A V K K L A>

 650 660 670 680 690 700
 GCA ATG GTT GAC ATT ACT ACT GAA GAA CTG AAA CAG CAG TTT GAT CAA GAA ATA
 A M V D I T E E L K Q Q F D Q E I>

 710 720 730 740 750
 AAA GTA ATG GCA AAG TGT CAA CAT GAA AAC TTA GTA GAA CTA CTT GGT TTC TCA
 K V M A K C Q H E N L V E L L G F S>

 760 770 780 790 800 810
 AGT GAT GGA GAT GAC CTC TGC TTA GTA TAT GTT TAC ATG CCT AAT GGT TCA TTG
 S D G D D L C L V Y V Y M P N G S L>

 820 830 840 850 860
 CTA GAC AGA CTC TCT TGC TTG GAT GGT ACT CCA CCA CTT TCT TGG CAC ATG AGA
 L D R L S C L D G T P P L S W H M R>

 870 880 890 900 910
 TGC AAG ATT GCT CAG GGT GCA GCT AAT GGC ATC AAT TTT CTA CAT GAA AAT CAT
 C K I A Q G A A N G I N F L H E N H>

 920 930 940 950 960 970
 CAT ATT CAT AGA GAT ATT AAA AGT GCA AAT ATC TTA CTG GAT GAA GCT TTT ACT
 H I H R D I K S A N I L L D E A F T>

 980 990 1000 1010 1020
 GCT AAA ATA TCT GAC TTT GGC CTT GCA CGG GCT TCT GAG AAG TTT GCC CAG ACA
 A K I S D F G L A R A S E K F A Q T>

 1030 1040 1050 1060 1070 1080
 GTC ATG ACT AGC AGA ATT GTG GGA ACA ACA GCT TAT ATG GCA CCA GAA GCT TTG
 V M T S R I V G T T A Y M A P E A L>

 1090 1100 1110 1120 1130
 CGT GGA GAA ATA ACA CCC AAA TCT GAT ATT TAC AGC TTT GGT GTG GTT TTA CTA
 R G E I T P K S D I Y S F G V V L L>

 1140 1150 1160 1170 1180
 GAA ATA ATA ACT GGA CTT CCA GCT GTG GAT GAA CAC CGT GAA CCT CAG TTA TTG
 E I I T G L P A V D E H R E P Q L L>

 1190 1200 1210 1220 1230 1240
 CTA GAT ATT AAA GAA GAA ATT GAA GAT GAA GAA AAG ACA ATT GAA GAT TAT ATT
 L D I K E E I E D E E K T I E D Y I>

FIGURE 2B

1250 1260 1270 1280 1290
GAT AAA AAG ATG AAT GAT GCT GAT TCC ACT TCA GTT GAA GCT ATG TAC TCT GTT
D K K M N D A D S T S V E A M Y S V>

1300 1310 1320 1330 1340 1350
GCT AGT CAA TGT CTG CAT GAA AAG AAA AAT AAG AGA CCA GAC ATT AAG AAG GTT
A S Q C L H E K K N K R P D I K K V>

1360 1370 1380
CAA CAG CTG CTG CAA GAG ATG ACA GCT TCT TAA
Q Q L L Q E M T A S *>

FIGURE 2C

mIRAK-4 amino acid sequence

10 20 30 40 50
MNK PLT PST YIR NLN VGI LRK LSD FID PQE GWK KLA VAI KKP SGD DRY NQF HIR

60 70 80 90 100
RFE ALL QTG KSP TCE LLF DWG TTN CTV GDL VDL LVQ IEL FAP ATL LLP DAV PQT

110 120 130 140 150 160
VKS LPP REA ATV AQT HGP CQE KDR TSV MPM PKL EHS CEP PDS SSP DNR SVE SSD

170 180 190 200 210
TRF HSF SFH ELK SIT NNF DEQ PAS AGG NRM GEG GFG VVY KGC VNN TIV AVK KLG

220 230 240 250 260 270
AMV EIS TEE LKQ QFD QEI KVM ATC QHE NLV ELL GFS SDS DNL CLV YAY MPN GSL

280 290 300 310 320
LDR LSC LDG TPP LSW HTR CKV AQG TAN GIR FLH ENH RII RDI KSA NIL LDK DFT

330 340 350 360 370
AKI SDF GLA RAS ARL AQT VMT SRI VGT TAY MAP EAL RGE ITP KSD IYS FGV VLL

380 390 400 410 420 430
ELI TGL AAV DEN REP QLL LDI KEE IED EEK TIE DYT DEK MSD ADP ASV EAM YSA

440 450 460
ASQ CLH EKK NRR PDI AKV QQL LQE MSA *

FIGURE 3

mIRAK-4 nucleotide sequence:

10 20 30 40 50
GCG GCC GCG TCG ACA TGC CCC GGT GAC CCG CAG CAT CCC GAT CGC AGG CAG TCT

60 70 80 90 100
GAA GTC GCC TGG TGG TCC TGC GTC CTC CAC CCC CGA GTC CTC GCC GGA CGT GGC

110 120 130 140 150 160
GGG ACG CCG ATC GCC TTG TCC AGG AAG CGA GGG ACG TCC GAG AGG AAG TAG AAG

170 180 190 200 210
ATG AAC AAG CCG TTG ACA CCA TCG ACA TAC ATA CGC AAC CTT AAT GTG GGG ATC
M N K P L T P S T Y I R N L N V G I>

220 230 240 250 260 270
CTT AGG AAG CTG TCG GAT TTT ATT GAT CCT CAA GAA GGG TGG AAG AAA TTA GCA
L R K L S D F I D P Q E G W K K L A>

280 290 300 310 320
GTA GCT ATC AAA AAG CCG TCC GGC GAC GAC AGA TAC AAT CAG TTC CAT ATA AGG
V A I K K P S G D D R Y N Q F H I R>

330 340 350 360 370
AGA TTC GAA GCC TTA CTT CAG ACC GGG AAG AGC CCC ACC TGT GAA CTG CTG TTT
R F E A L L Q T G K S P T C E L L F>

380 390 400 410 420 430
GAC TGG GGC ACC ACG AAC TGC ACA GTT GGC GAC CTT GTG GAT CTA CTG GTC CAG
D W G T T N C T V G D L V D L L V Q>

440 450 460 470 480
ATT GAG CTG TTT GCC CCC GCC ACT CTC CTG CTG CCG GAT GCC GTT CCC CAA ACC
I E L F A P A T L L L P D A V P Q T>

490 500 510 520 530 540
GTC AAA AGC CTG CCT CCT AGA GAA GCG GCA ACA GTG GCA CAA ACA CAC GGG CCT
V K S L P P R E A A T V A Q T H G P>

550 560 570 580 590
TGT CAG GAA AAG GAC AGG ACA TCC GTA ATG CCT ATG CCG AAG CTA GAA CAC AGC
C Q E K D R T S V M P M P K L E H S>

600 610 620 630 640
TGC GAG CCA CCG GAC TCC TCA AGC CCA GAC AAC AGA AGT GTA GAG TCC AGC GAC
C E P P D S S S P D N R S V E S S D>

FIGURE 4A

650 660 670 680 690 700
 ACT CGG TTC CAC AGC TTC TCG TTC CAT GAA CTG AAG AGC ATC ACA AAC AAC TTC
 T R F H S F S F H E L K S I T N N F>

 710 720 730 740 750
 GAC GAG CAA CCC GCG TCT GCC GGT GGC AAC CGG ATG GGA GAG GGG GGA TTT GGA
 D E Q P A S A G G N R M G E G G F G>

 760 770 780 790 800 810
 GTG GTG TAC AAG GGC TGT GTG AAC AAC ACC ATC GTG GCG GTG AAG AAG CTC GGA
 V V Y K G C V N N T I V A V K K L G>

 820 830 840 850 860
 GCG ATG GTT GAA ATC AGT ACT GAA GAA CTA AAG CAA CAG TTT GAT CAA GAA ATT
 A M V E I S T E E L K Q Q F D Q E I>

 870 880 890 900 910
 AAA GTA ATG GCA ACG TGT CAG CAC GAG AAC CTG GTG GAG CTG CTC GGC TTC TCC
 K V M A T C Q H E N L V E L L G F S>

 920 930 940 950 960 970
 AGC GAC AGC GAC AAC CTG TGC TTA GTG TAT GCT TAC ATG CCC AAC GGG TCC TTG
 S D S D N L C L V Y A Y M P N G S L>

 980 990 1000 1010 1020
 CTG GAC AGA CTG TCC TGC CTG GAT GGT ACA CCA CCG CTT TCC TGG CAC ACA AGG
 L D R L S C L D G T R P P L S W H T R>

 1030 1040 1050 1060 1070 1080
 TGC AAG GTT GCT CAG GGG ACA GCA AAT GGC ATC AGG TTT CTG CAT GAA AAT CAT
 C K V A Q G T A N G I R F L H E N H>

 1090 1100 1110 1120 1130
 CAC ATT CAT AGA GAT ATT AAA AGT GCA AAT ATC TTA CTA GAC AAA GAC TTT ACT
 H I H R D I K S A N I L L D K D F T>

 1140 1150 1160 1170 1180
 GCC AAA ATA TCT GAC TTT GGG CTT GCA CGG GCT TCG GCA AGG CTA GCG CAG ACG
 A K I S D F G L A R A S A R L A Q T>

 1190 1200 1210 1220 1230 1240
 GTC ATG ACC AGC CGA ATC GTG GGC ACA ACG GCT TAC ATG GCA CCC GAA GCT TTG
 V M T S R I V G T T A Y M A P E A L>

 1250 1260 1270 1280 1290
 CGG GGA GAA ATA ACA CCC AAA TCT GAC ATC TAC AGC TTC GGC GTG GTT CTG TTG
 R G E I T P K S D I Y S F G V V L L>

FIGURE 4B

1300 1310 1320 1330 1340 1350
GAG CTG ATA ACC GGG CTG GCG GCT GTG GAT GAA AAC CGT GAA CCT CAA CTA CTG
E L I T G L A A V D E N R E P Q L L>

1360 1370 1380 1390 1400
CTG GAT ATT AAA GAA GAG ATT GAA GAT GAA GAG AAG ACG ATT GAA GAT TAC ACG
L D I K E E I E D E E K T I E D Y T>

1410 1420 1430 1440 1450
GAT GAG AAG ATG AGC GAT GCG GAC CCT GCT TCG GTG GAA GCA ATG TAC TCT GCT
D E K M S D A D P A S V E A M Y S A>

1460 1470 1480 1490 1500 1510
GCT AGC CAG TGT CTG CAT GAG AAG AAA AAC AGA CGG CCA GAC ATT GCA AAG GTT
A S Q C L H E K K N R R P D I A K V>

1520 1530 1540
CAA CAG CTG CTA CAA GAG ATG TCT GCT TAA
Q Q L L Q E M S A *>

FIGURE 4C

Association of endogenous IRAK-4 with TRAF6 and IRAK-1

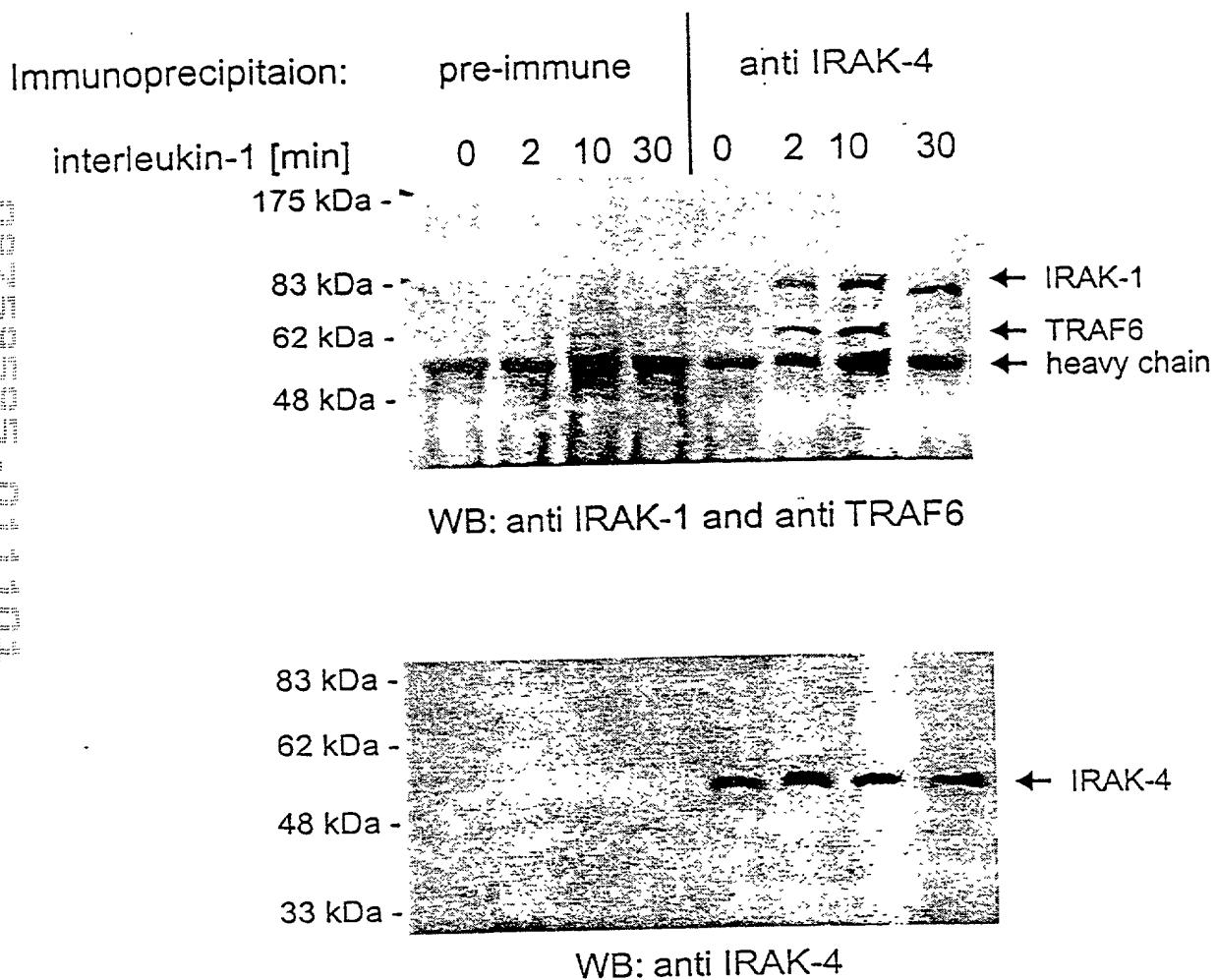


FIGURE 5